

Appendix 5.2.1 - Disinfection of Fish Eggs [with Iodine]

Article 5.2.1.1.

General comment: The section Disinfection of Fish Eggs [With Iodine] is not clear whether the discussion is about the disinfection of eyed-eggs or water hardening of newly fertilized eggs (green eggs). We suggest that Article 5.2.1.1 clearly define whether it is referring to the disinfection of eyed fish eggs or sanitizing newly fertilized fish eggs by water-hardening. The appropriate method of disinfecting fish eggs can vary with their stage of maturation.

Current proposed language

Introduction

Although generally effective for decontamination of egg surfaces, the use of [iodophor] *disinfectants such as iodophors*, cannot be relied upon to prevent vertical transmission of some bacterial (e.g. *Renibacterium salmoninarum*) and viral pathogens (e.g. infectious pancreatic necrosis virus) that may be present within the *egg*.

Suggested language:

Introduction

Although generally effective for decontamination of **eyed- egg or newly fertilized egg** surfaces, the use of [iodophor] *disinfectants such as iodophors*, cannot be relied upon to prevent vertical transmission of some bacterial (e.g. *Renibacterium salmoninarum*) and viral pathogens (e.g. infectious pancreatic necrosis virus) that may be present within the **eyed or newly fertilized- egg**.

Article 5.2.1.2

Language as proposed by the FDC:

Conditions of use

The pH of the solutions of the iodophor products must be between 6 and 8. At a pH of 6 or less, the toxicity for *eggs* increases, and at 8 or more, the antiseptic efficacy decreases. It is therefore essential to control the pH, and 100 mg/litre of NaHCO₃ must be added to water with a low alkalinity value. It is recommended that the *eggs* be rinsed in fresh water before and after *disinfection*, or that the iodine be neutralised with sodium thiosulfate, and that water free from organic matter be used to prepare the iodophor solution. Generous amounts of this solution should be used and the solution should be replaced when it turns pale yellow and before the colour disappears. One litre of solution at a concentration of 100 mg/litre *disinfectant* will disinfect 2000 salmonid *eggs*. **The contact time at this concentration should be no more than 30 minutes.**

Suggested language:

The pH of the solutions of the iodophor products must be between 6 and 8. At a pH of 6 or less, the toxicity for **eyed and newly fertilized** eggs increases, and at 8 or more, the antiseptic efficacy decreases. It is therefore essential to control the pH, and 100 mg/litre of NaHCO₃ must be added to water with a low alkalinity value. It is recommended that the **eyed**-eggs be rinsed in fresh water before and after *disinfection*, or that the iodine be neutralised with sodium thiosulfate, and that water free from organic matter be used to prepare the iodophor solution.. **The contact time at the concentration of 1 liter of 100 ppm of iodophore solution should not be less than ten minutes and the solution should be used only once .** **Additionally, for sanitizing newly-fertilized salmonid eggs via a water-hardening process with iodophors, the active ingredient should be no less than 50 ppm, the disinfection period no less than 30 minutes, and the solution should be used only once.**

Rational for suggested change:

Published literature indicates that if 2,000 salmonid eggs are placed in one liter of 100 ppm iodophor solution, within minutes there is significantly less iodine than the starting concentration of 100 ppm active ingredient (Chapman & Rogers, 1992, Progressive Fish Culturist). Further, to say “the solution should be replaced when it turns pale yellow and before the color disappears” is scientifically invalid. To have the intended viricidal and bactericidal effect, and given the rapid rate at which iodine is neutralized by organic material, i.e. the fish eggs, it is recommended that an iodophor solution equivalent to that prescribed, should be used only once.